

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A device, comprising:

a housing having a fixed portion and a moveable portion, the moveable portion

configured to move laterally with respect to the fixed portion;

a coupling member coupled to the moveable portion and the fixed portion, wherein the coupling member is configured to allow selective movement of the moveable portion with respect to the fixed portion; and

an actuator coupled to the coupling member, the actuator configured to output haptic feedback to the moveable portion of the housing via the coupling member.

2. (Original) The device of claim 1, wherein the coupling member is a flexure member.

3. (Original) The device of claim 1, wherein the haptic feedback is output based on an oscillation of a shaft of the actuator.

4. (Original) The device of claim 1, wherein the coupling member includes a first flexure member and a second flexure member, the first flexure member and the second flexure member being coupled between the moveable portion and the fixed portion, the actuator being configured to output the haptic feedback via at least one of the flexure members.

5. (Original) The device of claim 1, further comprising a manipulandum disposed adjacent to the moveable portion, the haptic feedback being imparted to the manipulandum.

6. (Original) The device of claim 1, further comprising a manipulandum disposed adjacent to the moveable portion, the haptic feedback being imparted to the manipulandum, the manipulandum is fixed in position with reference to the moveable portion.

7. (Original) The device of claim 1, further comprising a button disposed adjacent to the moveable portion, the haptic feedback being imparted to the button.

8. (Original) The device of claim 1, further comprising a button movable in a degree of freedom disposed adjacent to the moveable portion, the haptic feedback being imparted to the button in the degree of freedom.

9. (Original) The device of claim 1, further comprising a sensor coupled to the housing, the sensor being configured to detect a movement of the moveable portion with respect to the fixed portion.

10. (Cancelled)

11. (Cancelled)

12. (Currently Amended) A device, comprising:
a button depressible along a degree of freedom;
an actuator coupled to the button;
a sensor configured to detect a displacement of the button along the degree of freedom
when depressed; and

a processor coupled to the actuator and configured to send a signal to the actuator based on the detected displacement, the actuator configured to generate [[the]] a haptic feedback at least along the degree of freedom based on the signal.

13. (Original) The device of claim 12, wherein said actuator is a voice coil.

14. (Original) The device of claim 12, wherein the actuator includes a coil coupled to the button and a magnet coupled to a housing in which the button is disposed.

15. (Original) The device of claim 12, wherein the actuator includes a magnet coupled to the button and a coil coupled to a housing in which the button is disposed.

16. (Original) The device of claim 12, wherein the sensor is an analog sensor configured to output a position signal, the position signal associated with a position of the button.

17. (Original) The device of claim 12, wherein the haptic feedback includes a vibratory force produced as a function of time.

18. (Original) The device of claim 12, wherein the haptic feedback includes a spring force produced as a function of the displacement of the button.

19. (Original) The device of claim 12, wherein the haptic feedback includes a damping force produced as a function of a velocity of the button.

20. (Original) The device of claim 12, further comprising a flexure member coupled to the button and a housing in which the button is disposed.

21. (Cancelled)

22. (Original) The device of claim 12, further comprising:
a housing, the button being disposed in the housing; and a trackball coupled to the housing, the trackball configured to control a position of a cursor in a display.

23. (Original) The device of claim 12, further comprising:
a housing, the button disposed in the housing; and a joystick coupled to the housing, the joystick configured to control a position of a graphical object.

24. (Cancelled)

25. (Cancelled)

26. (Original) The device of claim 12, the actuator being a first actuator, the device further comprising a second actuator configured to output a vibration.

27. (Original) The device of claim 12, further comprising an isometric controller configured to control a position of a cursor in a graphical display.

28. (New) The device of claim 1, wherein the fixed portion and the moveable portion are configured to be engaged by one hand of a user.

29. (New) The device of claim 1, further comprising a sensor coupled to the housing and configured to detect movement of the housing in at least four degrees of freedom with respect to ground.

30. (New) The device of claim 1, wherein the housing is adapted to be coupled to a linkage mechanism coupled to ground.

31. (New) The device of claim 12, wherein button is integral to a housing having a fixed portion and a moveable portion, the fixed portion and the moveable portion configured to be engaged by one hand of a user.

32. (New) The device of claim 31, further comprising a sensor coupled to the housing and configured to detect movement of the housing in at least four degrees of freedom with respect to ground.

33. (New) The device of claim 31, wherein the housing is adapted to be coupled to a linkage mechanism coupled to ground.

34. (New) A method for providing haptic feedback to a manipulandum, comprising:

sensing movement of a button along a degree of freedom, the button of a moveable portion of the manipulandum, wherein the moveable portion moves along a substantially same plane with respect to a surface of a fixed portion of the manipulandum;

transmitting a first control signal to a processor upon sensing movement of the button;

receiving a first haptic feedback signal from the processor based on the first control

signal;

receiving a second haptic feedback signal from the processor based on a second control

signal;

outputting a first haptic feedback to the button along the degree of freedom in response to the first haptic feedback signal; and

outputting a second haptic feedback to the moveable portion of the manipulandum in response to the second haptic feedback signal.

35. (New) The method of claim 34, wherein the manipulandum controls a graphical object in a graphical environment, the second haptic feedback associated with an interaction of the graphical object with a simulated object in the graphical environment.

36. (New) The method of claim 34, further comprising sensing movement of the manipulandum along at least four degrees of freedom.